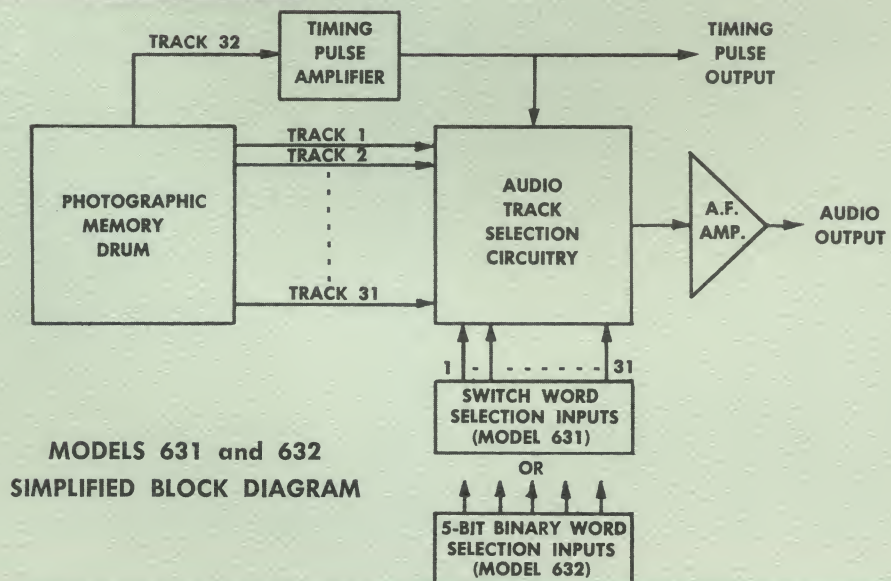
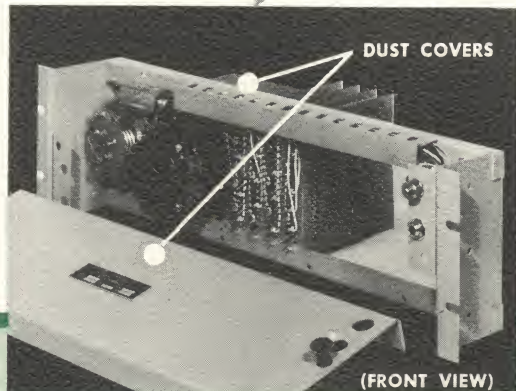
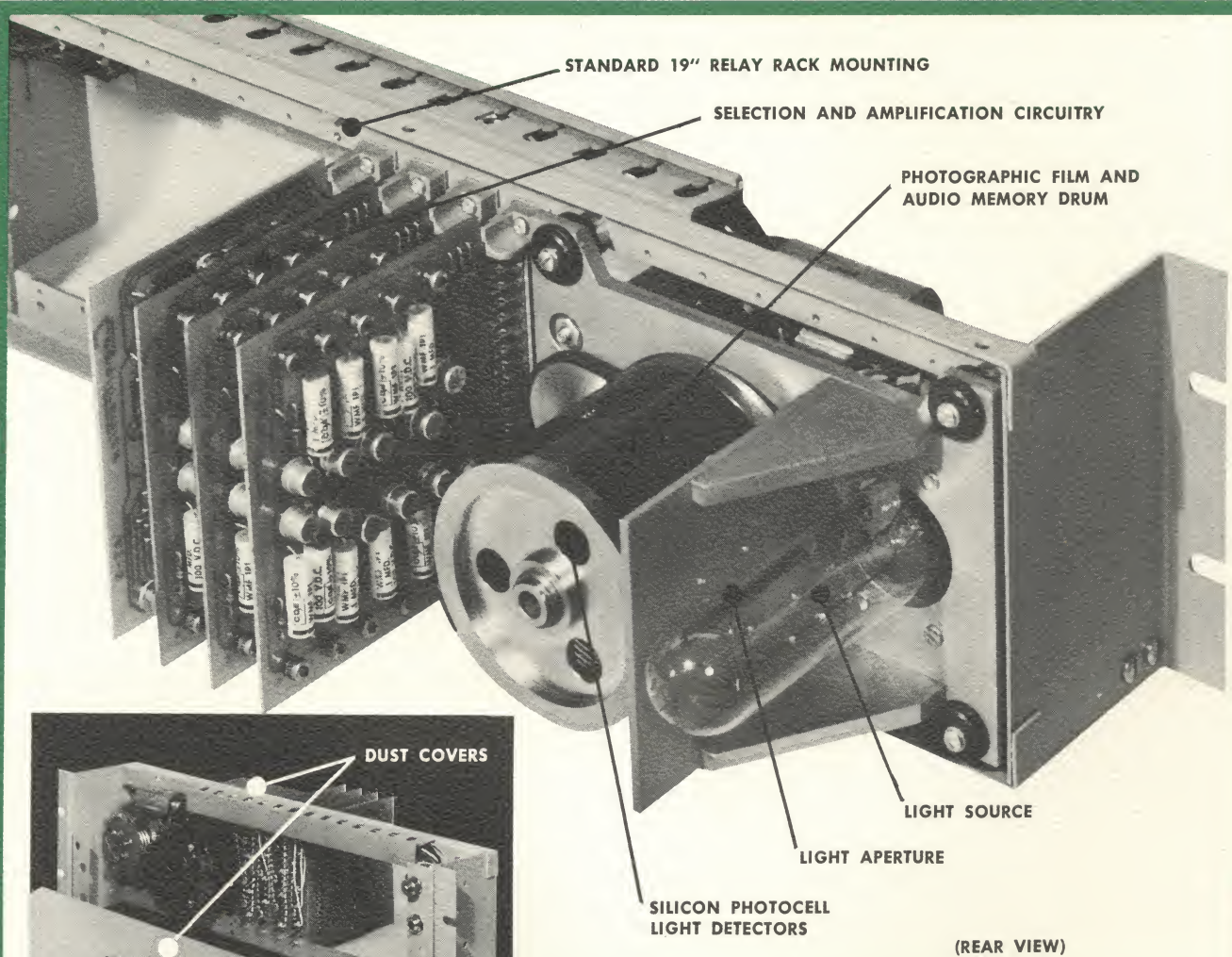


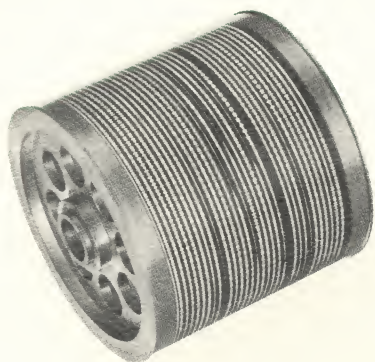
**AUTOMATIC
SPEECH
GENERATION**

**FOR COMPUTER
COMMUNICATIONS**

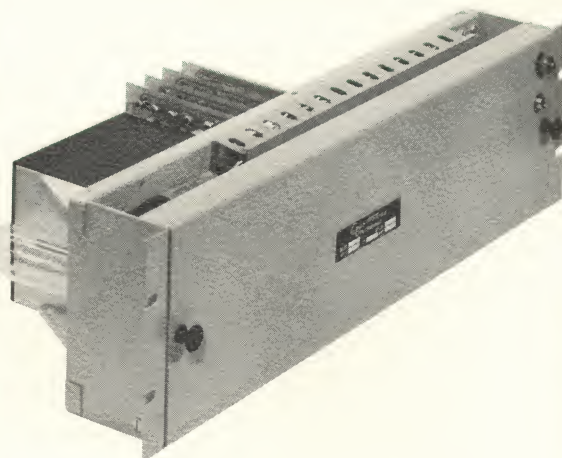
Cognitronics
SPEECHMAKER™

MODELS 631 & 632





The Memory Drum illustrated above operates with no physical contact between the recorded surface and sensing means. Long life without signal degradation is thus assured.



The complete SPEECHMAKER measures only 5¼" H x 19" W x 7¼" D requiring a very minimum amount of rack space for a complete verbal computer response system.

The Cognitronics SPEECHMAKER, Models 631 and 632, are designed to provide a direct and extremely flexible means of computer-to-man audio communications. Vocabularies of up to 31 words or phrases are stored in the SPEECHMAKER and on computer or manual command, spoken back singularly or in any group sequence.

The Model 631 vocabulary selection is by means of individual switch closures for each of the 31 words or phrases; the Model 632 contains a binary decoding matrix which enables it to perform the vocabulary selection function from a standard 5-bit binary code.

The heart of both units is a 3" photographic film audio memory drum with up to 32 tracks (1 track for each word or phrase and 1 for a timing pulse). A light source and aperture provide a narrow light beam that is directed through the rotating memory drum. This light beam is modulated by the pre-recorded audio on each track and in turn detected by silicon photo sensitive cells located within the memory drum (1 cell for each track). The output of the photo cells is then amplified to a level compatible with the associated equipment's audio amplifiers or fed directly to telephone lines. Both units are available with optional self contained power supplies and cabinets. These cabinets are designed for standard 19" relay rack mounting.

This completely new and unique technique results in a high degree of voice fidelity and quality with minimum maintenance requirements.

APPLICATIONS

The Cognitronics SPEECHMAKER, Models 631 and 632, are ideally suited for any application requiring direct audio computer communication including those applications which require memory stored information to be directly available upon telephone or keyboard interrogation. Output impedances are designed for direct association with telephone lines. Among these applications are:

Banking — Direct computer response upon telephone interrogation of balances, credits, etc. from the bank computer's central store.

Manufacturing — Inventories, production schedules, purchasing requirements are directly available, in audio form, from the controlling data processing equipment.

Paper Tape Control — With paper control, the SPEECHMAKER may be utilized for wiring instruction or teaching machine functions.

Rating and Routing Information

Verbal Readout of Instrumentation Systems

Weather and Time Information

Alarm Monitoring

Digital Voltmeter Readout

... or any other application requiring verbal audio response from switch or binary inputs.

SPEECHMAKERTM

MODELS 631 & 632

SPECIFICATIONS

Dimensions 5¼" High x 19" Wide x 7¼" Deep

Weight 6½ lbs. (631), 7 lbs. (632)

Mounting Rack

Tracks 32

Vocabulary Up to 31 individual message segments. Extra charge for special vocabularies.

Message Segment Length 600 ms

Cycle Time 625 ms

Power Requirements +12 VDC @ .5 amp., -12 VDC @ .5 amp.,
and 115 VAC, 60 cycles @ .5 amp.

Input (631)

Selection 31 individual switch closures

Signal -6 V to select, Gnd. (zero V) is off

Impedance Must be able to drive 5K connected to ground

Input (632)

Selection 5 bit Binary

Signal -6 V or ground on each of 5 wires, inverses on 5 more wires

Impedance Must be able to drive 500 ohms connected to -12 V

Output

Level 4 V peak-to-peak max.

Frequency Response within 3 db down, 300 cycles to 8 Kc

Impedance 1) 600 ohms
2) 50 ohms

Cabinet Optional at extra cost

Power Supply Optional at extra cost

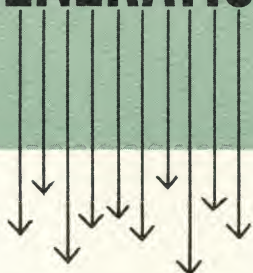


Cognitronics
Corporation

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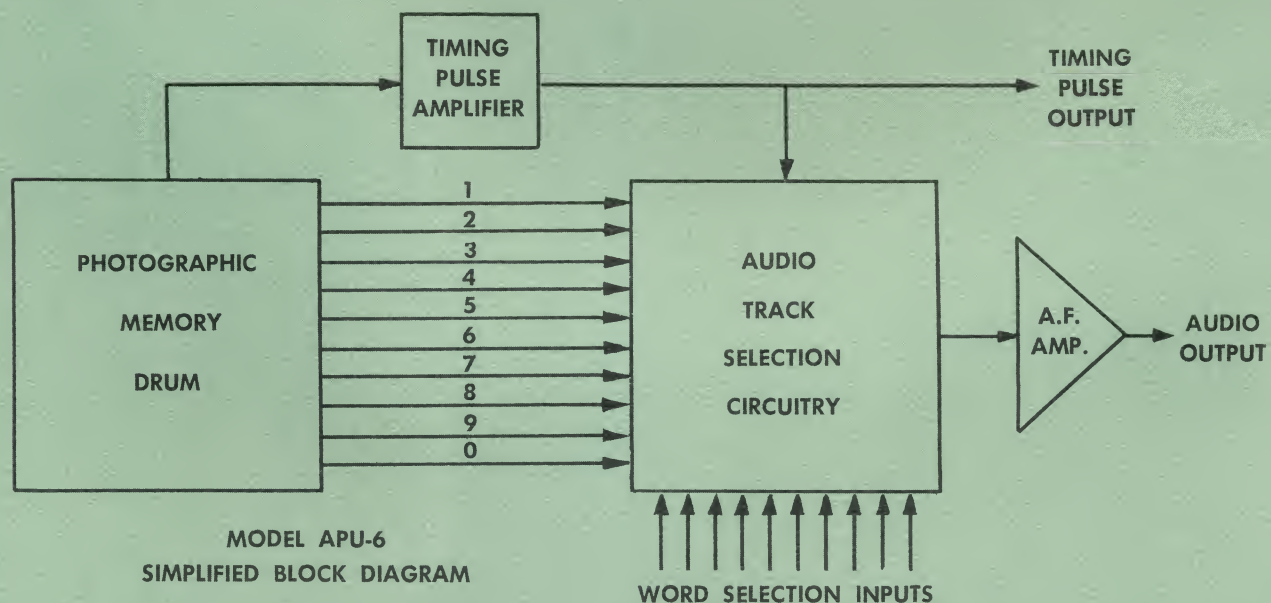
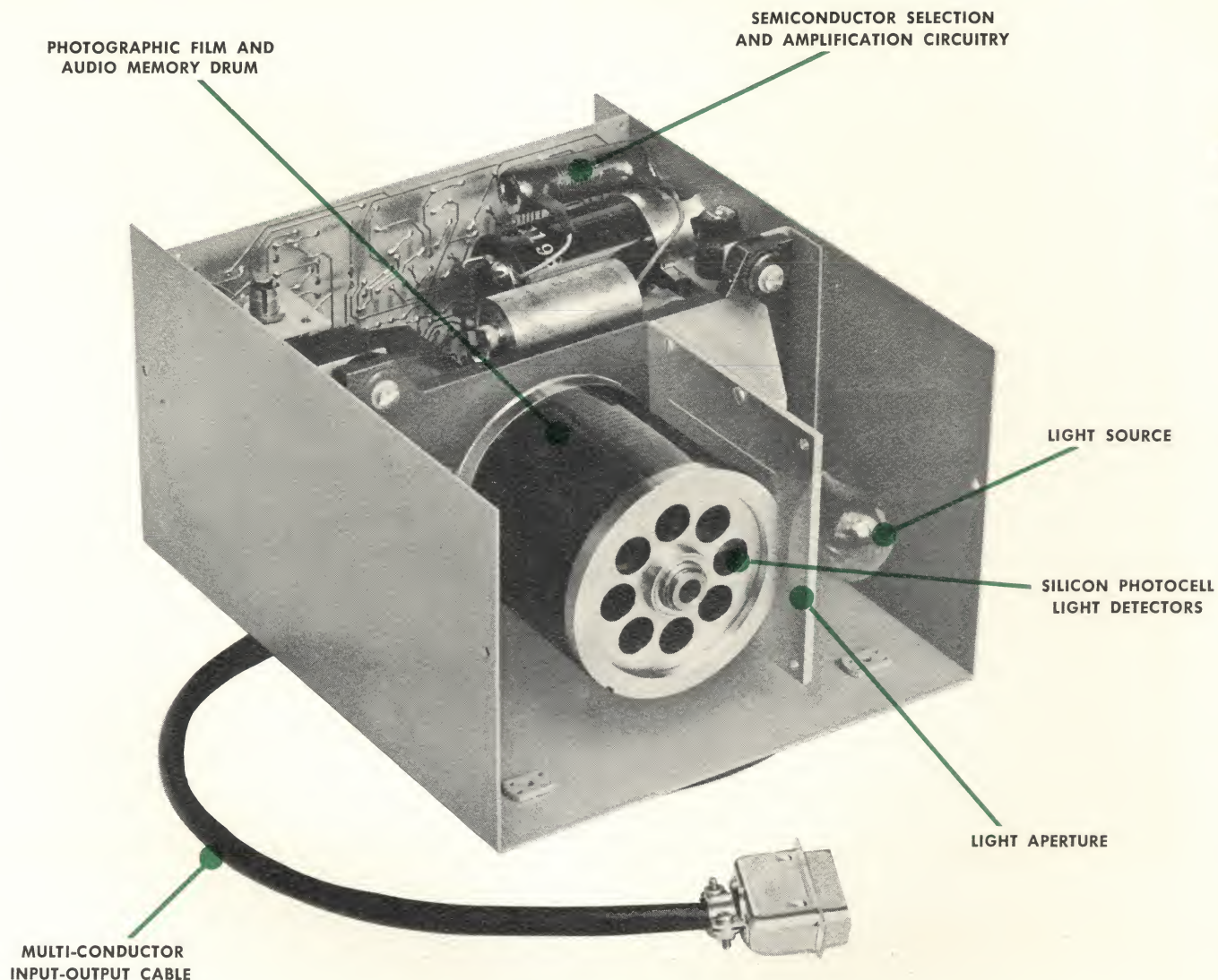
**AUTOMATIC
SPEECH
GENERATION**

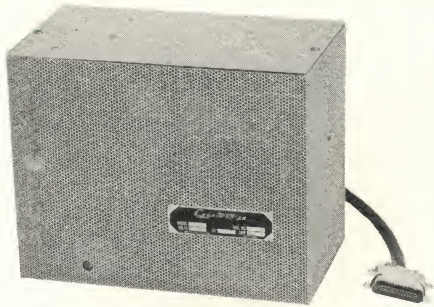


**FOR TELEPHONE
AND OTHER
COMMUNICATIONS
APPLICATIONS**



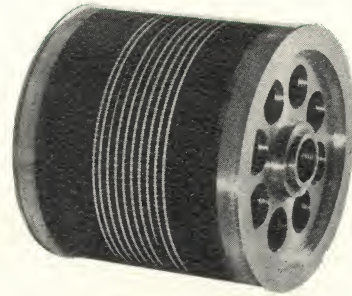
Cognitronics
SPEECHMAKERTM
MODEL APU-6





The Cognitronics SPEECHMAKER, Model APU-6, has been specifically designed to meet the requirements of the telephone and communications industries for a method of direct, verbal audio response from a variety of inputs including dial pulses, punched cards, paper tape, or other data sources. The APU-6 has a vocabulary of 10 numbers which may be addressed in any order or sequence demanded by the input interrogation.

The heart of the APU-6 is an eleven track photographic film cylinder which is pre-recorded with the ten spoken digits, "zero"



through "nine", and a one pulse timing track. A light source and aperture provide a narrow light beam that is modulated by the recorded signals appearing on each track. Eleven photo sensitive cells, one for each track, provide a means of sensing the modulated light beam and supply a proportionate output signal.

This completely new and unique technique results in a high degree of voice fidelity and quality while offering a virtually unlimited life span with minimum maintenance requirements.

APPLICATIONS

FIELD AND CENTRAL EXCHANGE INSTALLATIONS

Telephone installers and wiremen may tie into any line or pair which is to be tested, dial a three digit exchange number, and **automatically** receive back the spoken 7 digit number of the line he is tied into. This is a proven system that operates without intervention or assistance of any other personnel. Users of the SPEECHMAKER in this application have stated that it returned the initial investment costs in the first 90 days of operation.

EXCHANGE WIRING

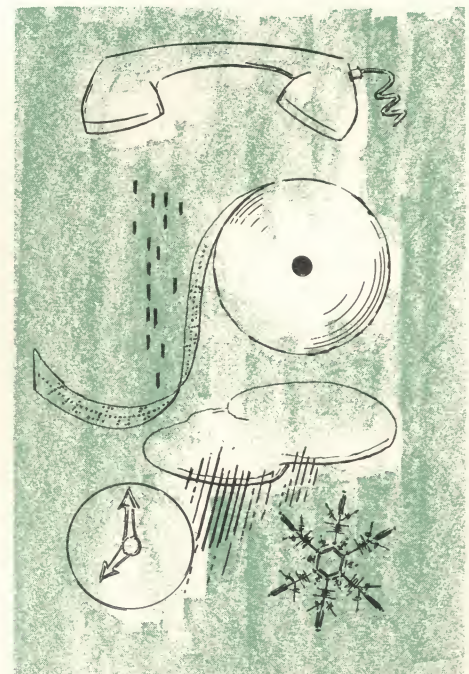
Wiremen, using the SPEECHMAKER with computer generated punched paper tapes or sequentially arranged punched cards, may receive verbal instructions for each cable termination. Wiring charts and their associated avenues of error are eliminated, while wiring operations are greatly accelerated.

OTHER APPLICATIONS

Other applications requiring greater or different vocabularies can be met with additional SPEECHMAKER models. These Applications include:

- Rating and Routing Information
- Verbal Readout of Instrumentation Systems
- Weather and Time Information • Subscription Number Changes

... or any computer readout that requires verbal audio response.



SPECIFICATIONS

Dimensions	8½" W x 7¼" H x 4¾" D
Weight	9¼ lbs.
Mounting	Console
Number of Tracks	Eleven
Vocabulary	Ten spoken digits ("zero" through "nine")
Cycle Time	625 Milliseconds
Power Requirements	115 VAC, 60 CPS, .5 amps. and minus 48 VDC, 100 ma

INPUT

Selection	10 Switch Closures
Signal	Select with minus 12 VDC, Ground is Off
Impedance	47K ohms

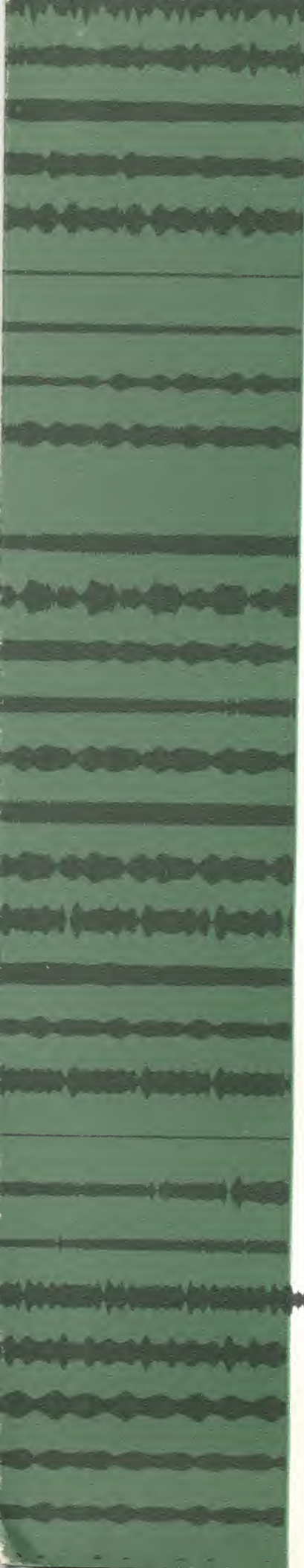
OUTPUT

Amplitude	4 Volts ma., peak-to-peak
Impedance	Output 1, 600 ohms Output 2, 100 ohms
Frequency Response	3 db points below 300 CPS and above 4 Kc

In addition to the SPEECHMAKER, Model APU-6, Cognitronics offers a variety of automatic speech generation systems and hardware to fill virtually any application requirement. Units with complete logic systems designed for compatability with digital computer requirements are also offered. If you have a particular application requirement, or require additional information, contact the Cognitronics Systems Applications Department. Our Personnel will be happy to work with you.



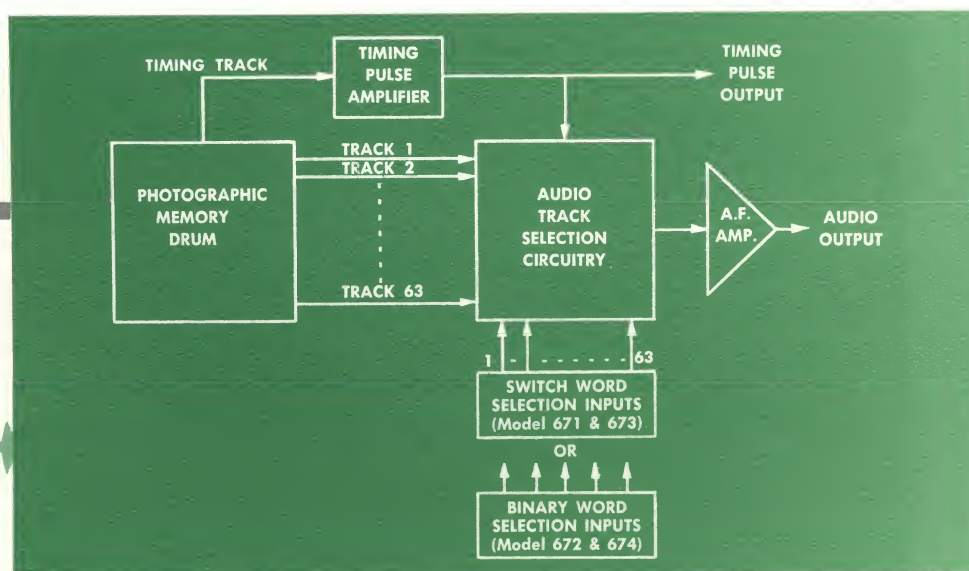
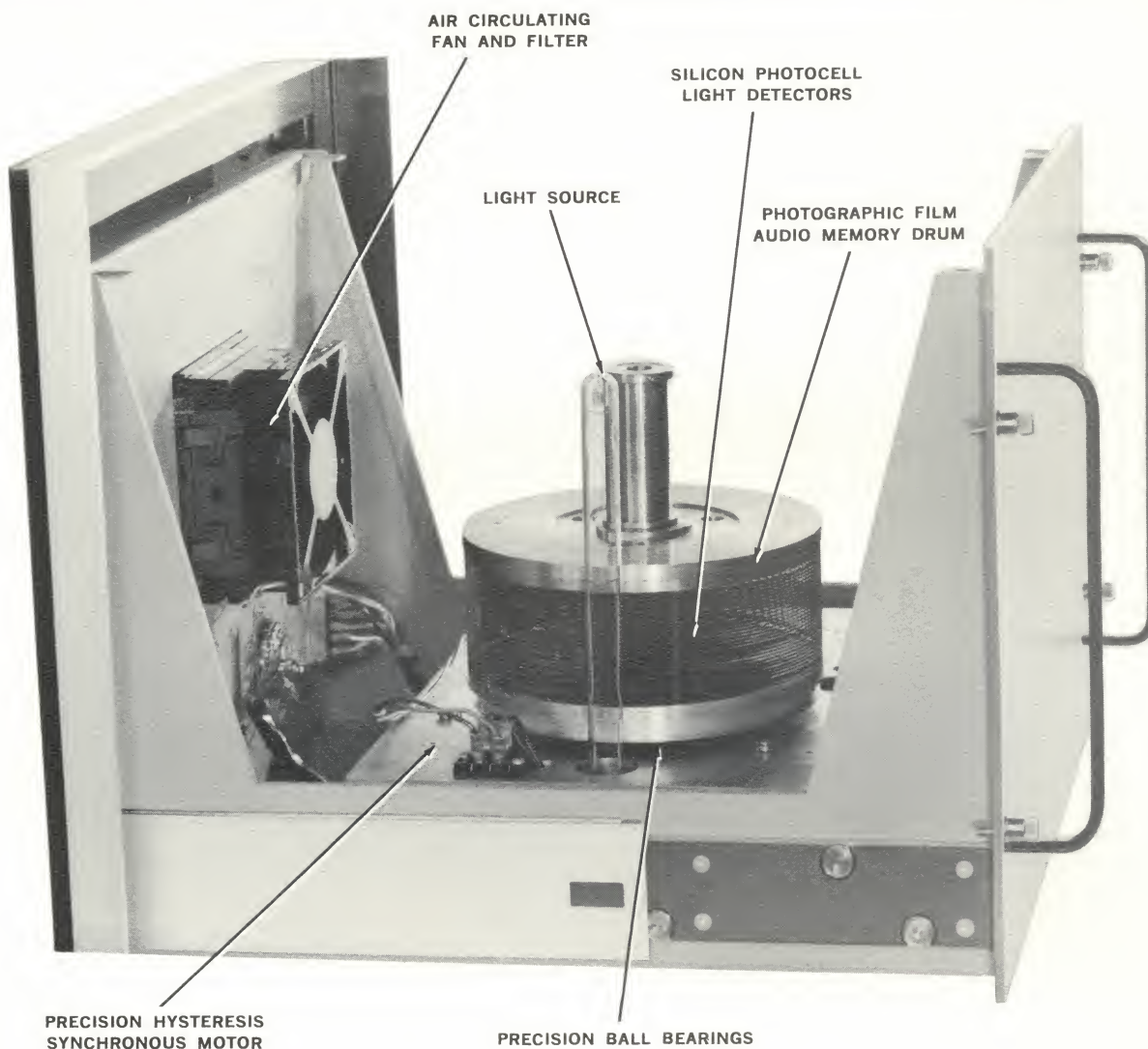
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**AUTOMATIC SPEECH
GENERATION for
COMPUTER and
communications
applications**

Cognitronics[®] SERIES 670
SPEECHMAKER[™]





The Cognitronics *Speechmaker* 670 Series of automatic speech generation equipment is designed to provide a highly reliable, direct means for data processing equipment-to-man communications. Words or phrases are stored on a unique photographic film memory drum and played back in any sequence specified by computer or manual command through standard telephone or audio equipment.

The units described in this brochure are manufactured to exceptionally high standards of quality and are designed to provide an extremely long and reliable life under continuous operation with minimum maintenance requirements. The memory drums ride on precision pre-loaded ball bearings for maximum life and tracking accuracy and are driven by a precision hysteresis synchronous motor. Filtered air is constantly circulated through the cabinet to eliminate dust build-up.

The heart of the *Speechmaker* is a photographic film memory drum with the required vocabulary pre-recorded on it. A light source and aperture provide a narrow light beam that is directed through the rotating memory drum. This light beam is modulated by the pre-recorded audio on each track and in turn detected by silicon photo sensitive cells located within the memory drum (1 cell for each track). The output of the photo cells is then amplified to a level compatible with the associated audio systems or fed directly to telephone lines. This unique recording and playback technique results in very high audio fidelity and, since no contact heads are required, an extremely long life without playback signal degradation under continuous operating conditions.

The *Speechmaker* Models in the 670 Series differ only in vocabulary capacity and method of information selection. The Models 671 and 672 have a vocabulary of 31 words or phrases. The 673 and 674 have a standard vocabulary of 63 words or phrases, and for special applications, can be supplied with up to 189 words. The Models 671 and 673 are designed for switch or relay selection of messages. The Models 672 and 674 include binary decoding matrices and logic for digital message selection. In addition to the normal message tracks, each drum contains a "once around" or timing pulse track.

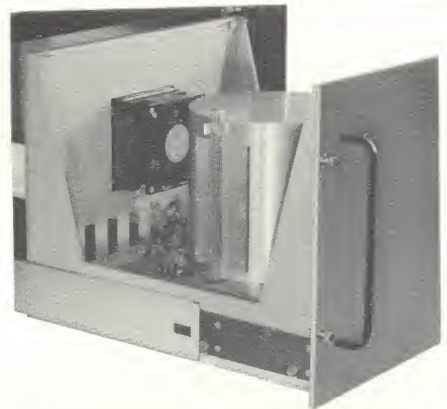
Standard models provide only one output. Multiple, completely independent, simultaneous outputs are available for the *Speechmaker* on special order. For such multiplexed applications, modularly designed circuits are supplied. These outputs, with proper input control logic, can supply simultaneous, independent channels of communication with entirely dissimilar or identical messages in any combination.

Standard *Speechmaker* Models in the 670 Series, are supplied for rack mounting in customer equipment and do not include power supplies. On special order, these units can be provided with integral power supplies and custom cabinet enclosures.

If your current or future application requirements include automatic speech generation equipment, contact Cognitronics, our complete line includes units to meet virtually every specification with maximum economy, fast delivery and high reliability.



Custom Speechmaker enclosures are available to include all selection circuitry, power supplies, and the memory unit. Overall dimensions are only 23 1/4" L x 23 3/4" H x 25 1/2" D.



The Speechmaker operates with no physical contact between the recording surface and sensing means. Extremely long life under continuous operating conditions and no signal degradation due to wear is thus assured.



The photographic film memory illustrated, contains 31 messages and a timing pulse track. Two of these films are used to provide a standard 63 message capability and up to 189 words for special applications.

APPLICATIONS:

As automatic data processing with storage and real-time retrieval of virtually any information becomes increasingly commonplace in industry, commerce, and education, the capability of direct machine-to-man communications has become an important factor in obtaining optimum efficiency and convenience from such a system. The *Speechmaker*, providing a machine generated audio response with a vocabulary specific to any need, and adaptable to any digital data system, fulfills this requirement.

Speechmaker units are in use as an output for the American Stock Exchange computer system permitting brokers to dial directly into the exchange's computerized information system (subject to real-time correction of stored data by continuous ticker tape input) and receive immediately, via audio response, information on any specific stock such as volume, bid, asked, etc.

In another application, telephone systems may now use *Speechmaker* units for an increasing number of routine operator functions such as provision of rate and route information, and for intercept messages explaining why a connection cannot be made. Dissemination of computer stored information to interested personnel may also be handled with *Speechmaker* units.

Further areas of utilization include reporting of inventory and ordering data in manufacturing operations, credit reporting in large machine-oriented merchandising operations, account status queries by tellers and bank credit managers, dispatching information in trucking and warehousing operations, and many other fields.

- FINANCIAL
- TELEPHONE
- BANKING
- WEATHER REPORTING
- MANUFACTURING
- CREDIT INFORMATION
- TRUCKING
- WAREHOUSING
- INVENTORY



SPECIFICATIONS

<p>GENERAL</p> <p>Dimensions Weight Mounting</p> <p>Message Segment Length Cycle Time Power Requirements</p> <p>Maintenance</p> <p>Cabinet Power Supply</p>	<p>19½" High x 18" Deep x 19" Wide 40 lbs.</p> <p>Rack Audio Unit 14" High, on chassis slides. Electronics fixed 5¼" Rack Mount</p> <p>Any sub-multiple of 1.60 seconds 1.60 sec.</p> <p>24 VDC @ 3 amp, +12 VDC @ 1 amp, -12 VDC @ 1 amp 115 VAC @ 0.3 amp</p> <p>Designed for 10 year life (precision ball bearings) and minimum maintenance</p> <p>Optional at extra cost Optional at extra cost</p>
<p>VOCABULARY*</p> <p>671 672 673 674</p>	<p>Up to 31 Words or Phrases (32 tracks) Up to 31 Words or Phrases (32 tracks) Up to 63 Words or Phrases (64 tracks) Up to 63 Words or Phrases (64 tracks)</p> <p>*Extra charge for first copy of special vocabularies</p>
<p>INPUT SELECTION</p> <p>671 and 673 Signal Impedance</p> <p>672 and 674 Signal Impedance</p>	<p>31 or 63 individual (external) switch closures or equivalent -6V to select, Gnd. (zero v) is Off 5 K connected to ground</p> <p>Binary -6V or ground and inverses 672: 500 ohms connected to ground 674: 250 ohms connected to ground</p>
<p>AUDIO OUTPUT</p> <p>Level</p> <p>Frequency Response Wow and Flutter Impedance</p>	<p>Adjustable by potentiometer from 0 to 4 V peak-to-peak</p> <p>Within 3 db, 300 cycles to 8 KC Less than 1% (hysteresis synchronous motor)</p> <p>1) 600 ohms 2) Approximately 100 ohms depending upon potentiometer setting</p>
<p>TIMING PULSE OUTPUT</p> <p>Level</p>	<p>Can supply 5 ma at zero volts during the timing pulse to an impedance connected to -12 V. -12 V from 2.7 K ohms at all other times.</p>



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TREASURE HILL PLEASANTVILLE ROAD • BRIARCLIFF MANOR • NEW YORK • PHONE ROGERS 9-7900

January 7, 1966

Mr. T. H. Nelson
Instructor in Soc.
Vassar College
ESA Department
Poughkeepsie, New York

Dear Mr. Nelson:

Thank you for your recent inquiry relative
to our Speechmaker Audio Equipment.

Enclosed are brochures describing our standard
models. In addition, we can provide multiplexing
electronics to service multiple queries simultaneously.

Prices of these units range from \$689 for
the APU-6 to \$4050 for the Model 674. An assortment of
cabinets and power supplies tailored for use with the
units in the 600 series is also available.

Current installations include several varieties
of telephone company applications, Air Force weather
announcing and audio output for the American Stock
Exchange.

Please let us know if you require additional
information.

Sincerely yours,

COGNITRONICS CORPORATION

James W. Proctor, Jr.
National Sales Manager

JWP:McK
Enc.

SPEECHMAKER

MODEL 63I

SPECIFICATIONS

Dimensions	5 1/4" High x 19" Wide x 7 1/4" Deep
Weight	6 1/2 lbs.
Mounting	Rack
Tracks	32
Vocabulary	Up to 31 individual message segments Extra charge for special vocabularies
Message Segment Length	600 ms
Cycle Time	625 ms
Power Requirements	+12 VDC @ .5 amp, -12 VDC @ .5 amp, and 115 VAC 60 cycle @ .5 amp
Input	
Selection	31 individual switch closures
Signal	-6 v to select, Gnd. (zero v) is Off
Impedance	Must be able to drive 5 K connected to ground
Output	
Level	4 v peak to peak max.
Frequency Response	3 db down, 300 cycles to 8 KC
Impedance	1) 600 ohms 2) 50 ohms
Cabinet	Optional at extra cost
Power Supply	Optional at extra cost

7/15/65
Parts List #411590

Cognitronics Corporation

SPEECHMAKER
MODEL 632
SPECIFICATIONS

Dimensions	5 1/4" High x 19" Wide x 7 1/4" Deep
Weight	7 lbs.
Mounting	Rack
Tracks	32
Vocabulary	Up to 31 individual message segments Extra charge for special vocabularies
Message Segment Lengths	600 ms
Cycle Time	625 ms
Power Requirements	+12 vdc @ .5 amp, -12 vdc @ .5 amp and 115 vac 60 cycles @ .5 amp
Input	
Selection	5 bit Binary Input
Signal	-6v or ground on each of 5 wires inverses on 5 more wires
Impedance	Must be able to drive 500 ohms connected to -12 v
Output	
Level	4 vdc peak to peak max.
Frequency Response	3 db down, 300 cycles to 8 KC
Impedance	1) 600 ohms 2) 50 ohms
Cabinet	Optional at extra cost
Power Supply	Optional at extra cost

7/15/65
Parts List #411591

Cognitronics Corporation

SPEECHMAKER

MODEL 671

SPECIFICATIONS

Dimensions	19 1/4" High x 18" Deep x 19" Wide
Weight	40 lbs.
Mounting	Rack Audio Unit 14" High, on chassis slides. Electronics fixed 5 1/4" Rack Mount
Tracks	32
Vocabulary	Up to 31 words or phrases. Extra charge for first copy of special vocabularies
Message Segment Length	Any sub-multiple of 1.60 seconds (including unity) minus 25 milliseconds
Cycle Time	1.60 sec.
Power Requirements	16 VDC @ 3 amp, +12 VDC @ 1 amp, -12 VDC @ 1 amp 115 VAC @ 0.3 amp
Input Selection	31 individual (external) switch closures or equiv.
Signal Impedance	-6v to select, Gnd. (zero v) is Off Must be able to drive 5 K connected to ground
Output Level	4 VDC peak to peak max.
Frequency Response	3 db down, 200 cycles to 8 KC
Wow and Flutter	Less than 1% (hysteresis synchronous motor)
Impedance	1) 600 ohms 2) 50 ohms
Maintenance	Designed for 10 year life (precision ball bearings) and minimum maintenance
Cabinet	Optional at extra cost
Power Supply	Optional at extra cost

7/15/65
Parts List #411586

Cognitronics Corporation

SPEECHMAKER
MODEL 672
SPECIFICATIONS

Dimensions	19 1/4" High x 18" Deep x 19" Wide
Weight	40 lbs.
Mounting	Rack Audio Unit 14" High, on chassis slides. Electronics fixed 5 1/4" Rack Mount
Tracks	32
Vocabulary	Up to 31 individual message segments. Extra charge for first copy of special vocabularies
Message Segment Length	Any sub-multiple of 1.60 seconds (including unity) minus 25 milliseconds
Cycle Time	1.60 sec.
Power Requirements	16 VDC @ 3 amp, +12 VDC @ 1 amp, -12 VDC @ 1 amp 115 VAC @ 0.3 amp
Input	
Selection	5 line Binary Input
Signal	-6v or ground on each of 5 wires, inverses of 5 more wires
Impedance	Must be able to drive 500 ohms connected to ground
Output	
Level	4 VDC peak to peak max.
Frequency Response	3 db down, 200 cycles to 8 KC
Wow and Flutter	Less than 1% (hysteresis synchronous motor)
Impedance	1) 600 ohms 2) 50 ohms
Maintenance	Designed for 10 year life (precision ball bearings) and minimum maintenance
Cabinet	Optional at extra cost
Power Supply	Optional at extra cost

7/15/65
Parts List #411587

Cognitronics Corporation

SPEECHMAKER

MODEL 673

SPECIFICATIONS

Dimensions	19 1/4" High x 18" Deep x 19" Wide
Weight	40 lbs.
Mounting	Rack Audio Unit 14" High, on chassis slides. Electronics fixed 5 1/4" Rack Mount
Tracks	64
Vocabulary	Up to 63 individual message segments. Extra charge for first copy of special vocabularies
Message Segment Length	Any sub-multiple of 1.60 seconds (including unity) minus 25 milliseconds
Cycle Time	1.60 sec.
Power Requirements	16 VDC @ 3 amp, +12 VDC @ 1 amp, -12 VDC @ 1 amp 115 VAC @ 0.3 amp
Input Selection	63 individual (external) switch closures or equiv.
Signal Impedance	-6v to select, Gnd. (zero v) is Off Must be able to drive 5 K connected to ground
Output Level	4 VDC peak to peak max.
Frequency Response	3 db down, 200 cycles to 8 KC
Wow and Flutter	Less than 1% (Hysteresis synchronous motor)
Impedance	1) 600 ohms 2) 50 ohms
Maintenance	Designed for 10 year life (precision ball bearings) and minimum maintenance
Cabinet	Optional at extra cost
Power Supply	Optional at extra cost

7/15/65
Parts List #411588

Cognitronics Corporation

SPEECHMAKER

MODEL 674

SPECIFICATIONS

Dimensions	19 1/4" High x 18" Deep x 19" Wide
Weight	40 lbs.
Mounting	Rack Audio Unit 14" High, on chassis slides. Electronics fixed 5 1/4" Rack Mount
Tracks	64
Vocabulary	Up to 63 individual message segments. Extra charge for first copy of special vocabularies
Message Segment Length	Any sub-multiple of 1.60 seconds (including unity) minus 25 milliseconds
Cycle Time	1.60 sec.
Power Requirements	16 VDC @ 3 amp, +12 VDC @ 1 amp, -12 VDC @ 1 amp 115 VAC @ 0.3 amp
Input	
Selection	5 line Binary Input
Signal	-6 v or ground on each of 5 wires, inverses on 5 more wires
Impedance	Must be able to drive 500 ohms connected to ground
Output	
Level	4 VDC peak to peak max.
Frequency Response	3 db down, 200 cycles to 8 KC
Wow and Flutter	Less than 1% (hysteresis synchronous motor)
Impedance	1) 600 ohms 2) 50 ohms
Maintenance	Designed for 10 year life (precision ball bearings) and minimum maintenance
Cabinet	Optional at extra cost
Power Supply	Optional at extra cost

7/15/65

Parts List #411589

Cognitronics Corporation



TREASURE HILL PLEASANTVILLE ROAD • BRIARCLIFF MANOR • NEW YORK • PHONE ROGERS 9-7900

October 19, 1965

Mr. T. H. Nelson
Systems Consultant
Box 1546
Poughkeepsie, New York 12603

Dear Mr. Nelson:

Thank you for your recent inquiry relative to our Speechmaker APU-6.

I am enclosing brochures on the Speechmaker APU-6 and Speechmakers 631 and 632 along with the specification sheets on four other standard Speechmaker units.

The current prices of these units range from \$689.00 for the Speechmaker APU-6 to \$4050.00 for the Speechmaker 674. An assortment of cabinets and power supplies tailored for use with the units in the 600 series is also available. Cognitronics Corporation engineers systems based on these and larger units for many different purposes, specifically including multiplexed outputs.

Very truly yours,

COGNITRONICS CORPORATION

Vincent E. Wentworth
Vice President, Sales

VEW:vg
Encl.